Assessment Cycle 2022-2023

Program -- Health and Exercise Science (377)

Division: Gallaspy College of Education and Human Development

Department: Health and Human Performance

Prepared by: Jaehun Jung **Date: 05/11/2023**

Approved by: Kimberly McAlister **Date: 05/30/2023**

Northwestern State University of Louisiana's Mission. Northwestern State University is a responsive, student-oriented institution committed to acquiring, creating, and disseminating knowledge through innovative teaching, research, and service. With its certificate, undergraduate, and graduate programs, Northwestern State University prepares its increasingly diverse student population to contribute to an inclusive global community with a steadfast dedication to improving our region, state, and nation.

College Mission. The Gallaspy Family College of Education and Human Development is committed to working collaboratively to acquire, create, and disseminate knowledge to Northwestern students through transformational, high-impact experiential learning practices, research, and service. Through the School of Education and Departments of Health and Human Performance, Military Science, Psychology, and Social Work, the College produces knowledgeable, inspired, and innovative graduates ready for lifelong learning who contribute to the communities in which they reside and professions they serve. Additionally, the GCEHD is dedicated to the communities served by the Marie Shaw Dunn Child Development Center, NSU Elementary Laboratory School, NSU Middle Laboratory School, and the NSU Child and Family Network to assist children and their families related to learning and development.

Department of Health and Human Performance's Mission. The Department of Health and Human Performance at Northwestern State University of Louisiana provides training for health, physical education, exercise science, and sport professionals.
Dedicated faculty and staff members build student knowledge through the discussion and utilization of current practices, topics, and trends to optimize classroom engagement. The department goals align with the Gallaspy Family College of Education and Human Development, as faculty and staff members actively implement transformational, high-impact experiential learning practices, research, and service for a diverse population of learners. Students may earn one of three degrees – Bachelor of Science in Health and Exercise Science, Bachelor of Science in Health and Physical Education, or Master of Science in Health and Human Performance. Additionally, students in the Department of Health and Human Performance participate in competitive internships in a wide variety of locations.

Health and Exercise Science Program Mission Statement: Through the completion of program requirements for Health and Exercise Science, students will gain knowledge and skills for employment opportunities within the health, kinesiology, and exercise science industries. Students will acquire, create, and disseminate knowledge through

transformational, high-impact experiential learning practices, critical thinking, research, reflective analysis, communication, and evaluation. The Bachelor of Science Degree in Health and Exercise Science challenges students to develop plausible solutions to the diagnostic and prescriptive response to exercise needs in health scenarios. Through these learning experiences, Health and Exercise Science students are prepared for life and career success in this every growing field.

Methodology: The assessment process for the HAES program is as follows:

(1) Data from assessment tools are collected and returned to the Department Head.

(2) The Department Head will analyze the data to determine whether students have met measurable outcomes.

(3) Results from the assessment will be discussed with the program faculty.

(4) Individual meetings will be held with faculty teaching major undergraduate courses if required (show cause).

(5) The Department Head, in consultation with the HHP Advisory Committee, will propose changes to measurable outcomes, assessment tools for the next assessment period and, where needed, curricula and program changes.

Student Learning Outcomes:

SLO 1. The student will demonstrate a basic knowledge of exercise science.

Course Map: Tied to course syllabus objectives.

HP 2000: Introduction to Exercise Science
HP 2270: Physical Fitness
HED 3000: Community Health
HP 3550: Applied Kinesiology
HP 3560: Exercise Physiology

Measure 1.1. (Direct – Knowledge)

On an annual basis, students enrolled in HP 2000, HP 2270, HED 3000, HP 3550 and HP 3560, all required courses for HAES Bachelor students, will be administered course exams designed to evaluate the student knowledge and understanding of the foundational concepts, theories, strategies, and challenges of the four segments of the Health and Fitness industry. 75% of enrolled students will be able to describe a basic knowledge of the Health and Fitness industry standards by scoring 70% or higher on the exams.

Assessment Cycle 2022-2023

Finding. Target was met.

Analysis. In AC 2021-2022, students exceeded the target, as 97.64% (83 of 85) of students scored higher than 70% on final exams. As a result of changes made to curriculum, and with the addition of a new faculty member, in AC 2022-2023, 91.1% of students exceeded the target of 75% of the students scoring 70% or higher on these exercises. In all classes listed, students continue to successfully demonstrate critical thinking and problem-solving skills through a variety of case studies, as well as scenario-driven exercises (labs), in which they were required to analyze and develop a response to a health and exercise related situation. In these responses, students demonstrated proper response and actionable recommendations based on the information presented.

Based on the analysis of AC 2021-2022 data, faculty implemented the following changes in AC 2022-2023 to drive the cycle of improvement. Faculty brought in former students as guest speakers to illustrate the use and performance of the course content and practicability of coursework in the real world to strengthen and enhance the learning opportunity for current students (HP 2000, HP 3550) and elevate the successful performance of students even higher.

The curriculum enlisted guest lecturers (clinical professionals) to visit the classes in the fall and spring of 2022-2023, to review knowledge, skills, and career opportunities in overall health and injury recovery. These changes improved the student's ability to demonstrate critical thinking and problem-solving skills as well as gather a more complete understanding of the coursework design related to the real world and improve classroom performance thereby continuing to push the cycle of improvement forward. Additionally, faculty determined that to maximize student learning and to continue to improve the program, faculty incorporated innovative case studies into other courses in the program, which further assisted student success in preparation for upper-level coursework and the internship. Some students sought out the Medical Terminology course (as Advisor Approved Elective) to enhance their HHP curriculum, and to prepare for graduate school in Physical Therapy and Occupational Therapy programs. HHP advisors encouraged this academic pursuit.

As a result of these changes, in AC 2022-2023 the target was met. 91.5% of the students (n = 236; measured through HP 2000, 2270, 3550, 3560, and HED 3000) scored 70% or higher on these exercises.

Decision. In AC 2022-2023, the target was met.

Based on information gathered from analysis of the AC 2022-2023 data, faculty will implement the following changes in AC 2023-2024 to drive the cycle of improvement. In AC 2023-2024, faculty will teach courses in lab-like conditions, with students evaluating case studies and developing protocols for activity-based prescription treatments to drive the cycle of improvement.

These changes will improve the student's ability to demonstrate a basic knowledge of exercise science, thereby continuing to push the cycle of improvement forward.

Assessment Cycle 2022-2023

Measure 1.2. (Direct – Skill / Ability)

Students will demonstrate their critical thinking and problem-solving skills through a variety of case studies, as well as scenario-driven exercises in which they are required to analyze and develop a response to a health and exercise related situation. In these responses, they must demonstrate proper response and actionable recommendations based on the information presented. 75% of the students will score 70% or higher on these exercises.

Finding. Target Not Met.

Analysis. In AC 2021-2022 the target was exceeded with 91% of students scoring 70% of higher on problem solving exercises. Courses were offered with changes to curriculum with new faculty to NSU; however, due to changes in personnel, data was not collected for this measure in 2022-2023.

Decision. In AC 2022-2023, the target was not met. Since data was not collected during 2022-2023 to drive the cycle of improvement, faculty will return to recommended changed for 2021-2022 moving forward to AC 2023-2024.

In AC 2023-2024, faculty will add case studies and scenario driven exercises to coursework to increase student engagement. These changes will improve the student's ability to demonstrate a basic knowledge of exercise science, thereby continuing to push the cycle of improvement forward.

SLO 2. The student will demonstrate the ability to develop an exercise prescription plan, which encompasses the initial prescription, maintenance for such prescription and subsequent re-evaluation strategies for apparently healthy populations.

Course Map: Tied to course syllabus below.

HP 4170: Testing, Evaluation, and Prescription of Exercise in Health and Human Performance

Measure: 2.1. **(Direct – Skill / Ability)**

Students will prepare a prescription plan for a specified health need/condition. In these responses, the student will demonstrate proper progression toward the expected outcome and actionable recommendations based on the scenario(s). 75% of the students will score 80% or higher on these exercises.

Finding. Target was met.

Analysis. In AC 2021-2022 the target was met. Students exceeded the goal set, with 83.3% of students (30 out of 36) scoring 80% or higher on the curriculum exercises

presented in HP 4170. This teaching method has improved the classroom performance (as well as the work-force related performance in clinics and therapy programs) as 83.3% of the students scored higher than 80% on these exercises, in a face-to-face laboratory setting. HP 4170 (Testing, Evaluation and Prescription of Exercise in HHP) is a course in which students reviewed and studied several cases dealing with health threatening conditions, and therapeutic recovery techniques. Upon defining the respective physical restrictions, students then addressed these conditions through proper prescription of exercise and duration, to determine strength and conditioning, flexibility, endurance, and aerobic capacity as needed for rehabilitation in each case. These changes impacted the student's ability to prepare a prescription plan for a specified health need/condition. 83% students (30 out of 36) successfully demonstrated critical thinking and problem-solving skills through a variety of case studies, as well as scenario-driven exercises, in which they were required to analyze and develop a response to a health and exercise related situation.

Based on the analysis of AC 2021-2022 data, faculty implemented the following changes in AC 2022-2023 to drive the cycle of improvement. Faculty offered this important course in the face-to-face format. Faculty determined that to maximize student learning and to continue to improve the program, the faculty introduced innovative and unique case studies into other courses in the program which further assisted student success in preparation for upper-level coursework and the internship. HP 4170 is one of the best and most popular courses in the HAES program for preparing the student to engage with real-life situations and to provide a prescription of physical activity as a remedy prior to the internship. The assessment for this measure was the final examination grades for the course, as the final examination provided the student with an instructor-derived scenario(s), that required a comprehensive effort from the student.

As a result of these changes, in AC 2022-23, the target was met. 100% of the students (n = 26; measured through HP 4170) scored 70% or higher on these exercises.

Decision. In AC 2022-2023, the target was met.

Based on information gathered from analysis of the AC 2022-2023 data, faculty will implement the following changes in AC 2023-2024 to drive the cycle of improvement. In AC 2023-2024, faculty will teach HP 4170 as lab-like conditions, as students evaluated case studies and wrote protocols for activity-based prescription treatments to drive the cycle of improvement.

These changes will improve the student's ability to develop an exercise prescription plan, which encompasses the initial prescription, maintenance for such prescription and subsequent re-evaluation strategies for apparently healthy populations, thereby continuing to push the cycle of improvement forward.

Assessment Cycle 2022-2023

Measure: 2.2. (Direct -- Knowledge)

Students will be able to understand and identify the correct prescriptive activity and the duration of exercise needed to satisfy the outcome required by the respective scenario(s). This will be determined with 75% of the students earning a score at least 80% on semester course exams.

Finding: Target was met.

Analysis: In AC 2021-2022 the target was met. 83% of the students (30 out of 36) successfully completed the final exam and were able to correctly and thoroughly identify the necessary prescriptive activity and the duration of exercise needed, to satisfy the outcome required by the respective scenario(s), specifically, that 83% of the students earning a score at least 80% on semester course exams. These changes had a direct impact on the student's ability to identify and recognize the elements of rehabilitative physical exercises in case study programs; however, when required to come up with prescriptive exercises and rehabilitative program exercises, students struggled with but were weak in the creation and design of their own prescriptive exercise programs.

Based on the analysis of AC 2021-2022 data, faculty implemented the following changes in AC 2022-2023 to drive the cycle of improvement. Faculty offered the course in face-to-face format. Faculty focused on strengthening skills that included the ability to think rationally and critically, write effectively and summarily, as well as make mathematical calculations. Instead of having the students generate necessary prescriptive activities, students selected from a list of prescriptive exercises provided and applied the correct prescriptive activities in response to given scenarios of need. The assessment for this measure was the final examination grades for the course, as the final examination provided the student with a unique, instructor-derived scenario, that required a comprehensive effort from the student to apply the knowledge and skills reviewed and learned from the semester.

As a result of these changes, in AC 2022-23, the target was met. 100% of the students (n = 26; measured through HP 4170) scored 70% or higher on these exercises.

Decision. In AC 2022-2023, the target was met.

Based on information gathered from analysis of the AC 2022-2023 data, faculty will implement the following changes in AC 2023-2024 to drive the cycle of improvement. In AC 2023-2024, faculty will teach HP 4170 as lab-like conditions, as students evaluated case studies and wrote protocols for activity-based prescription treatments to drive the cycle of improvement.

These changes will improve the student's ability to develop an exercise prescription plan, which encompasses the initial prescription, maintenance for such prescription and subsequent re-evaluation strategies for apparently healthy populations, thereby

continuing to push the cycle of improvement forward.

SLO 3. The student will be able to demonstrate the ability to administer test protocols for evaluating the components of physical fitness.

Course Map: Tied to course syllabus below.

HP 3561: Exercise Physiology Laboratory
HP 4170: Testing, Evaluation, and Prescription of Exercise in Health and Human Performance
HED 3000 – Personal and Community Health

Measure 3.1. (Direct – Skill / Ability)

The student will earn a performance evaluation score of 70% or higher in the administration of testing protocols for various physical fitness components through laboratory experiences. This will be determined with 75% of the students earning a score at least 80% on semester course exams.

Finding: Target was met.

Analysis: In AC 2021 – 2022, The target was met. These courses are the laboratory settings for the HHP Health and Exercise Science curriculum. In all cases, 91% (123 of 135) of the students successfully demonstrated proper administration of testing protocols for various physical fitness components through laboratory experiences. Low performance was addressed in curriculum structure for AC 2018 – 2019, with the addition of a new faculty member and expectation that scores would change in a positive direction. Lab classes were expanded into two sections, and two separate days of the week.

HP 4170 case studies were moved from published journal case studies, to unique, instructor-generated cases, that were sensitive to specific student needs, based on feedback from HHP Advisory Council (site supervisors of internships). Current evidence supports the positive direction that changes to the AC 2018-2019 curriculum suggested. Evidence from the AC 2019 – 2020 assessment cycle has further indicated positive changes in the HP 4170 scores from AC 2018- 2019 (89.2%) to the present overall student success of 91% (123 /135) earning a score at least 70% on semester course exams. These changes had a direct impact on the student's ability to administer test protocols for evaluating the components of physical fitness.

Based on the analysis of AC 2021-2022 data, faculty implemented the following changes in AC 2022-2023 to drive the cycle of improvement. Faculty recommended expanding the subject matter expertise in the program by hiring a terminally degreed faculty member with Exercise Physiology-credentialed teaching experience, who could continue and grow the instructional format and introduce students to concepts of

prescriptive exercises through additional HAES courses and continue with biology prerequisites.

The HP 3561 labs addressed prescriptive exercise activity for HHP students, and prescriptive activity was addressed in HP 3560 and HP 4170 textbooks, respectively. The final evaluation satisfied the assessment need (≥80.00%) for both courses (HP 3561 and HP 4170), and thus served as the tool for assessment. The final exam in HP 4170 specifically addressed the prescription of physical activity as a treatment for a variety of physical debilitations and clinical rehabilitations, and it served as the assessment tool. Students reviewed a variety of case studies throughout the course(s) duration, and then test over an assigned scenario(s) from the instructor for the final exam. This treatment condition prepared the students for an internship at 1) a fitness / wellness club (Recreational and Commercial segments of the Fitness Industry), where the student was able to assess physical performance levels, and provide subsequent prescriptive activity to address training needs; and 2) a clinical setting (Physical Therapy or Occupational Therapy or Cardiac Rehabilitation), where the student was able to prescribe physical activity as a treatment for a variety of physical debilitations and clinical rehabilitations. Through this internship opportunity, under the watchful eye of the respectively trained site supervisor, students were provided the opportunity to apply the knowledge and skills reviewed and learned from HP 4170, into a real-life setting.

As a result of these changes, in AC 2022-23, the target was met. 94.1% of the students (n = 85; measured through HP 3561, 4170, HED 3000) scored 70% or higher on these exercises.

Decision. In AC 2022-2023, the target was met.

Based on information gathered from analysis of the AC 2022-2023 data, faculty will implement the following changes in AC 2023-2024 to drive the cycle of improvement. In AC 2023-2024, faculty will provide course materials that promote students to spend more hours improving the ability to administer test protocols for evaluating the components of physical fitness. The HP 3561 Physiology of Exercise lab course will be g merged with HP 3560 Physiology of Exercise. Thus, this extra 1 hour will no longer be part of the curriculum. This change reflects the change in requirements for post-professional degree programs.

These changes will improve the student's ability to administer testing protocols for various physical fitness components through laboratory experiences thereby continuing to push the cycle of improvement forward. The program will also be streamlined with the combination of HP 3560 and HP 3561.

Measure 3.2. (Direct – Knowledge)

Students will correctly select the appropriate test protocol to be used in various physical fitness and exercise settings (corporate, recreational, clinical, and/or commercial). This

will be determined with 75% of the students earning a score of at least 70% on semester course exams.

Finding: Target was met.

Analysis: In AC 2021-2022 the target was met. In AC 2021 – 2022, 93.7% of students enrolled in classes which provided evidence for analysis, correctly selected the appropriate test protocol used in various physical fitness and exercise setting scenarios in the four segments of the fitness industry (corporate, recreational, clinical and/or commercial). HHP searched for a fulltime terminally degreed Exercise Physiologist to head this core of HAES courses. These courses represent the very heart of the HHP Health and Exercise Science curriculum, and they provide training to the students who have chosen to enter and perform in the health fitness settings (recreational, clinical, corporate, and commercial). The academic requirement is rigorous and demanding for students, with prerequisites in upper-level biology courses for a science foundation.

Students without a background in science, tend to struggle in the biology and the physiology curriculums, several having to repeat the prerequisite courses as many as 3 times, before earning a passing grade. This struggle continues in the HHP curriculum, as the exercise physiology and the biomechanics courses are very challenging. These changes impacted/made/had a direct impact on the student's ability to correctly select the appropriate test protocol to be used in various physical fitness and exercise settings (corporate, recreational, clinical, and/or commercial).

Based on the analysis of AC 2021-2022 data, faculty implemented the following changes in AC 2022-2023 to drive the cycle of improvement. Faculty provided instructor-generated test protocol information in the respective courses. Faculty challenged the students to think critically and to be able to rationalize proper responses to rigorous and relevant artificial scenarios. These faculty-driven efforts enhanced student-learning and strengthened student skill performance for selection of the appropriate test protocols. Additionally, these challenge actions from faculty prepared the student for the real-life experiences of the internship experience that occurs during the last semester of the program.

As a result of these changes, in AC 2022-23, the target was met. 94.1% of the students (n = 85; measured through HP 3561, 4170, HED 3000) scored 70% or higher on these exercises.

Decision. In AC 2022-2023, the target was met.

Based on information gathered from analysis of the AC 2022-2023 data, faculty will implement the following changes in AC 2023-2024 to drive the cycle of improvement. In AC 2023-2024, faculty will provide course materials that promote students to spend more hours in hands-on application of knowledge and skills. This includes more opportunities for service learning outside the classroom practicing the skills while also providing a service to the campus and surrounding communities.

These changes will improve the student's ability to correctly select and apply the appropriate test protocol to be used in various physical fitness and exercise settings (corporate, recreational, clinical, and/or commercial) thereby continuing to push the cycle of improvement forward.

Comprehensive Summary of Key Evidence of Improvement Based on Analysis of Results.

Program faculty made several decisions after examining results of data analysis from AC 2021-2022 which resulted in improved student learning and program improvement in AC 2022-2023.

- Faculty engaged HAES students with unique instructor- generated case scenarios, the application of skills, abilities, and theories to course curriculums. This curriculum is a face-to-face program, with strong emphasis on hands-on learning.

- This effort on the part of faculty, to engage in program improvement strengthened student skill performance and further prepared the student for the internship experience that occurs during the last semester of the program.

- Faculty modified course curriculum and assignment, as well as added additional resources to the program that focused on the professional preparation of students to be successful in the internship and the work setting.

- The department searched for a full-time, long-term PhD instructor in the exercise science courses (HP 2270, HP 3560, HP 3550, HP 3560, and HP 4170) to challenge students with consistent academic requirements for successful professional development. The full-time instructor provided students with academic rigor and expected higher standards of performance.

Plan of Action for Moving Forward:

Program faculty examined the evidence and results of data analysis from AC 2022-2023 and will take steps to continue to improve student learning in AC 2023-2024:

- Faculty will utilize more precise measures including course materials to measure student achievement aligned with the student learning outcomes.
- Faculty will provide course materials including a variety of case studies as well as scenario-driven exercises in which they were required to analyze and develop a response to a health and exercise science-related situation.
- Faculty will provide course materials that promote students to spend more hours improving the ability to administer test protocols for evaluating the components of physical fitness.

- Faculty will teach HP 4170 as lab-like conditions, as students evaluated case studies and wrote protocols for activity-based prescription treatments to drive the cycle of improvement.